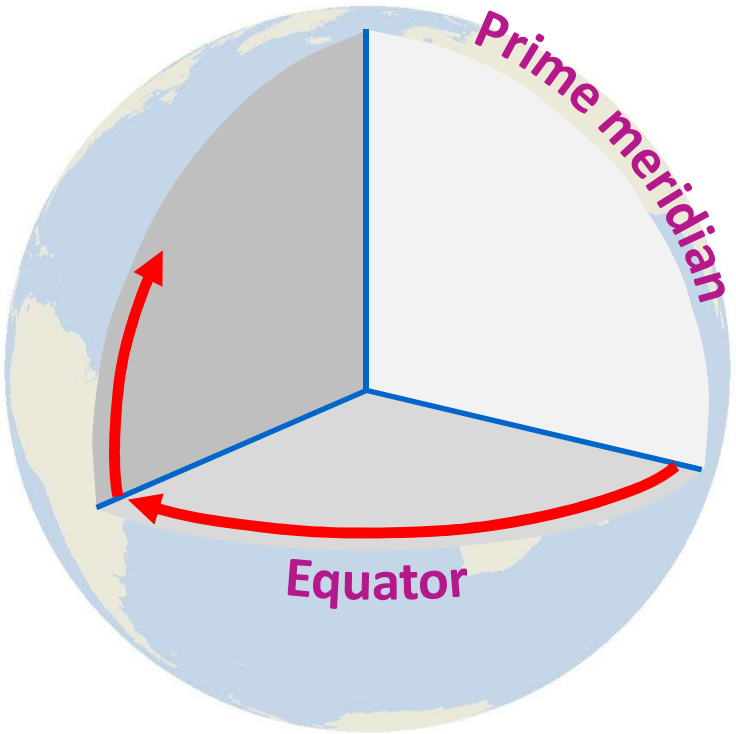
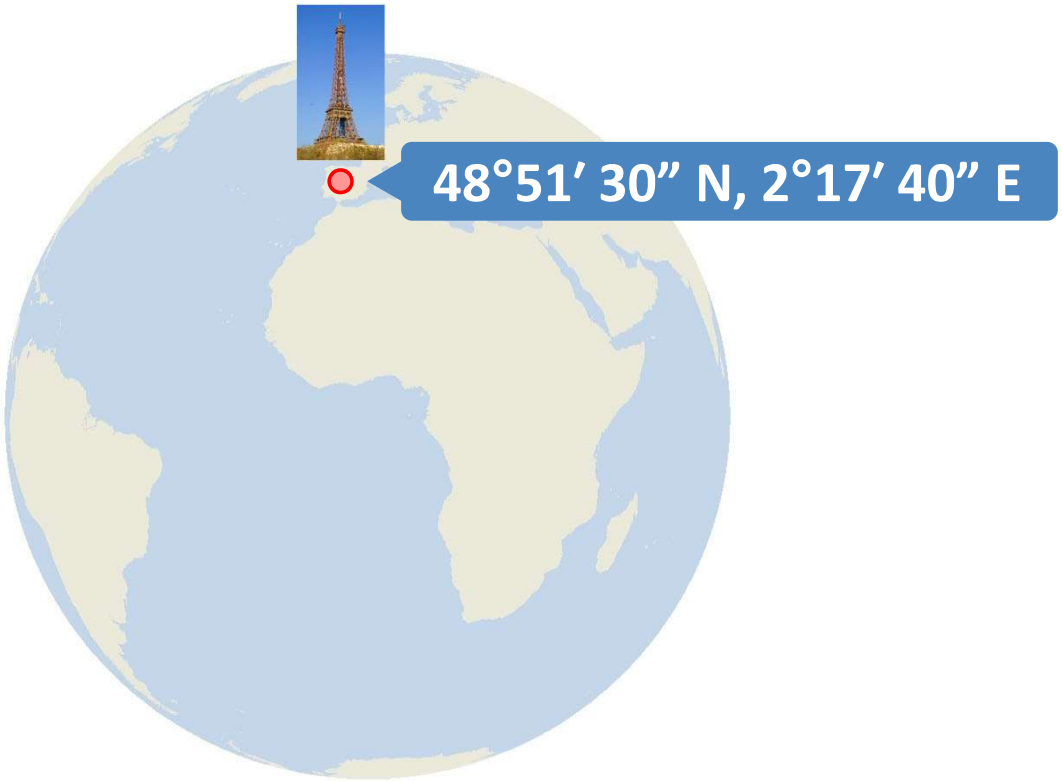
Longitude and latitude

How do we describe a location?

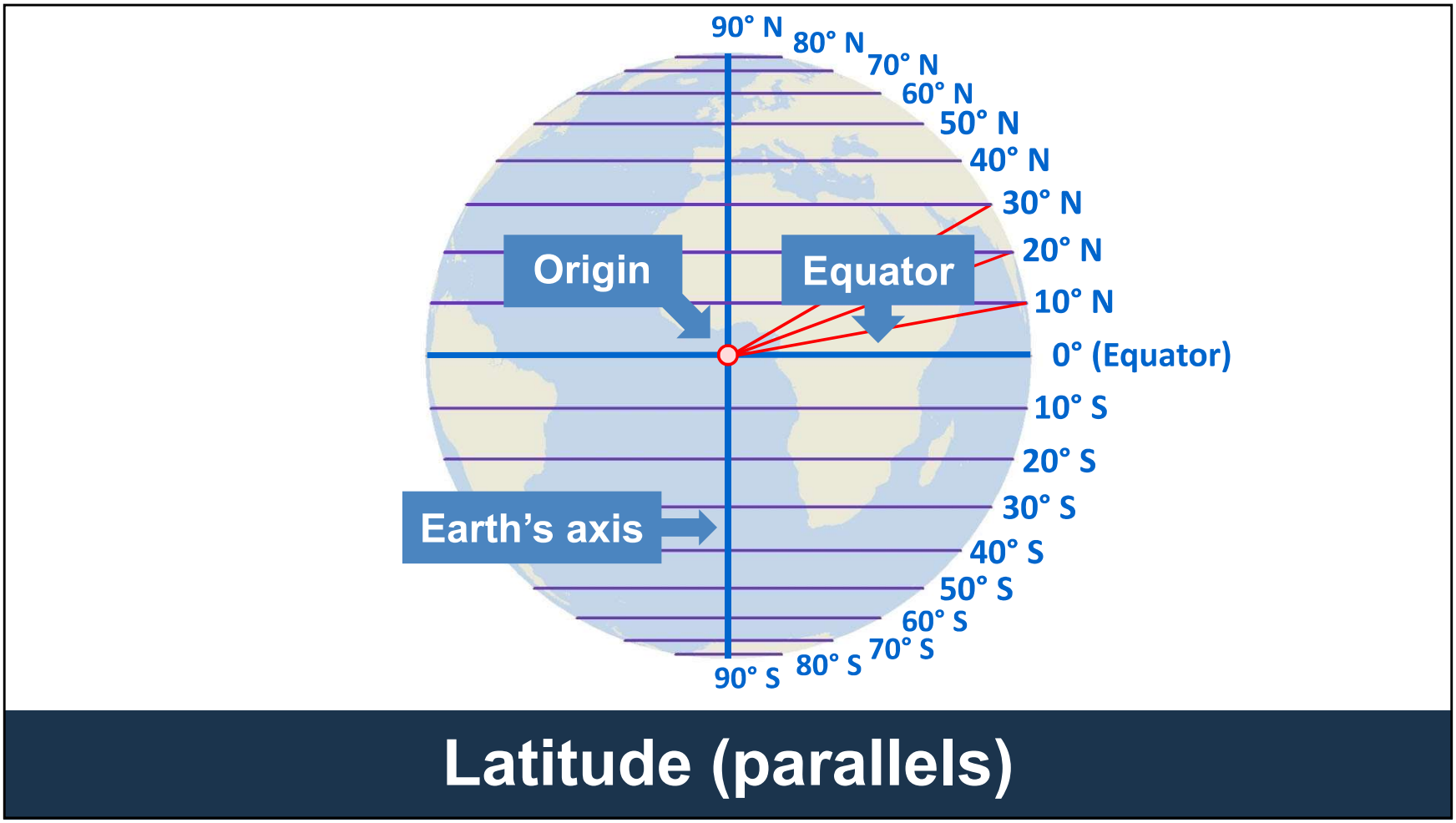


(adapted from Kimmerling *et al.*, 2009)

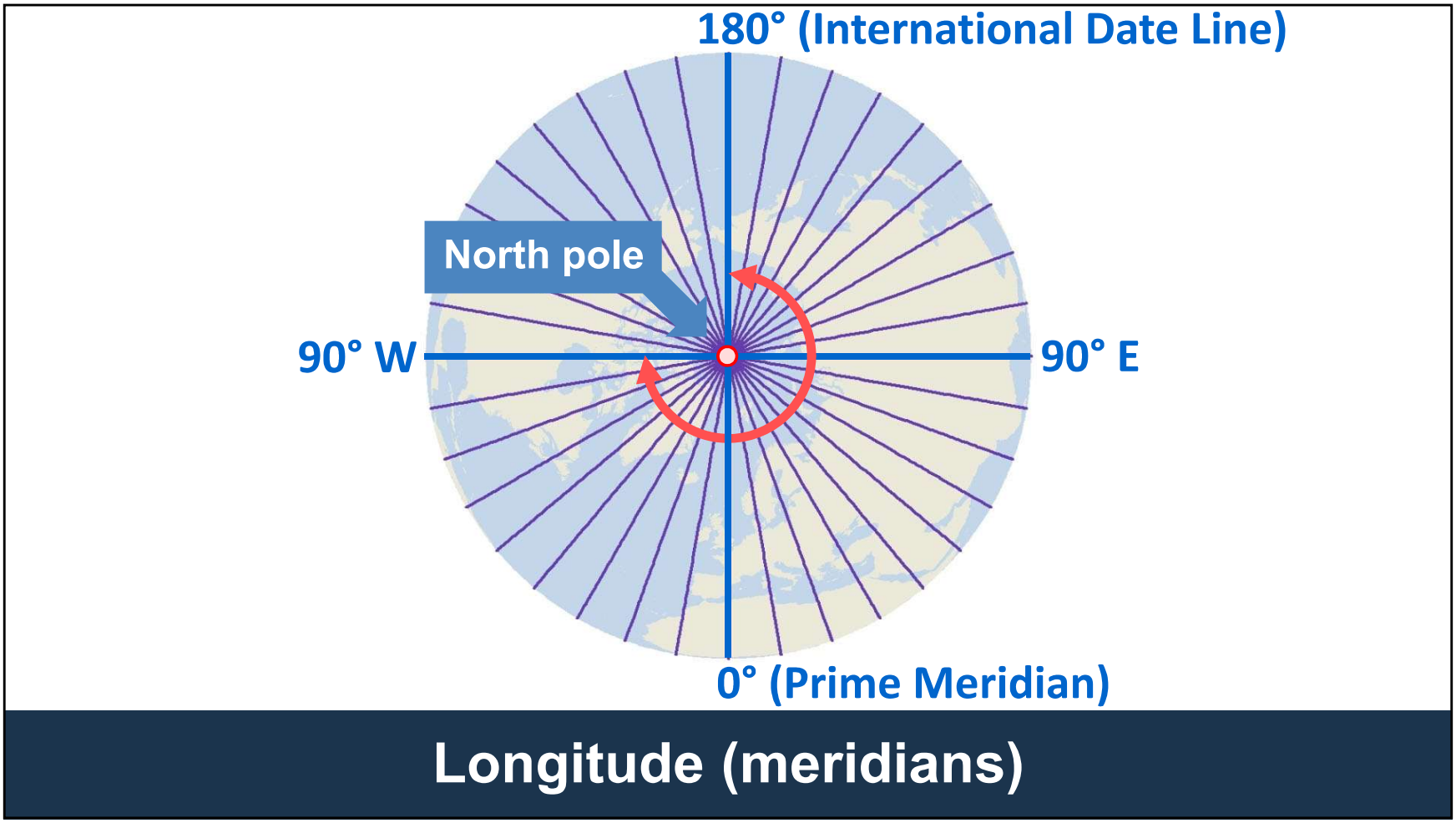
Angular unit of measure



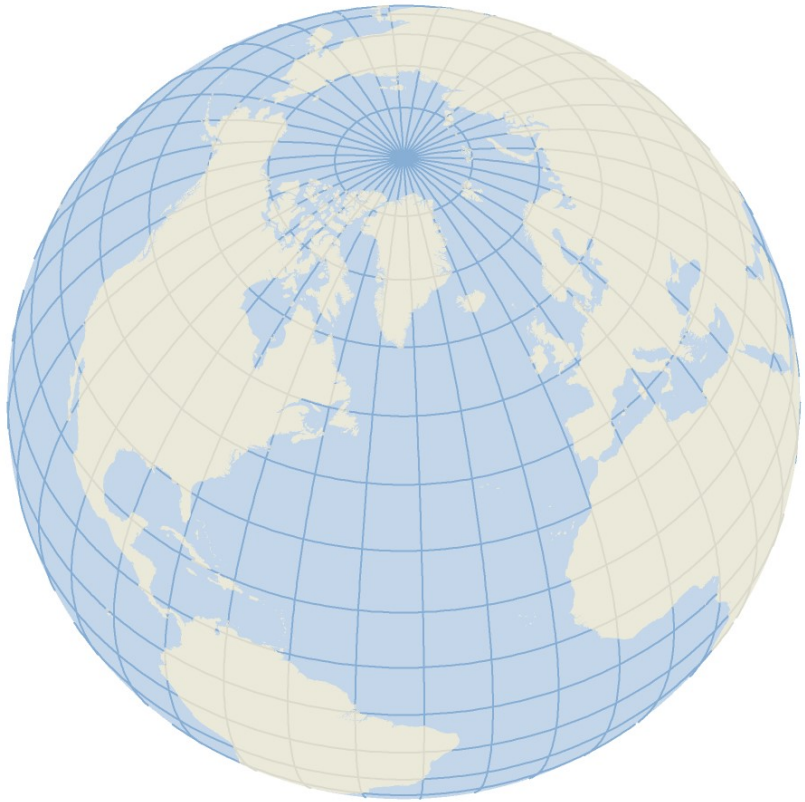
Longitude and latitude



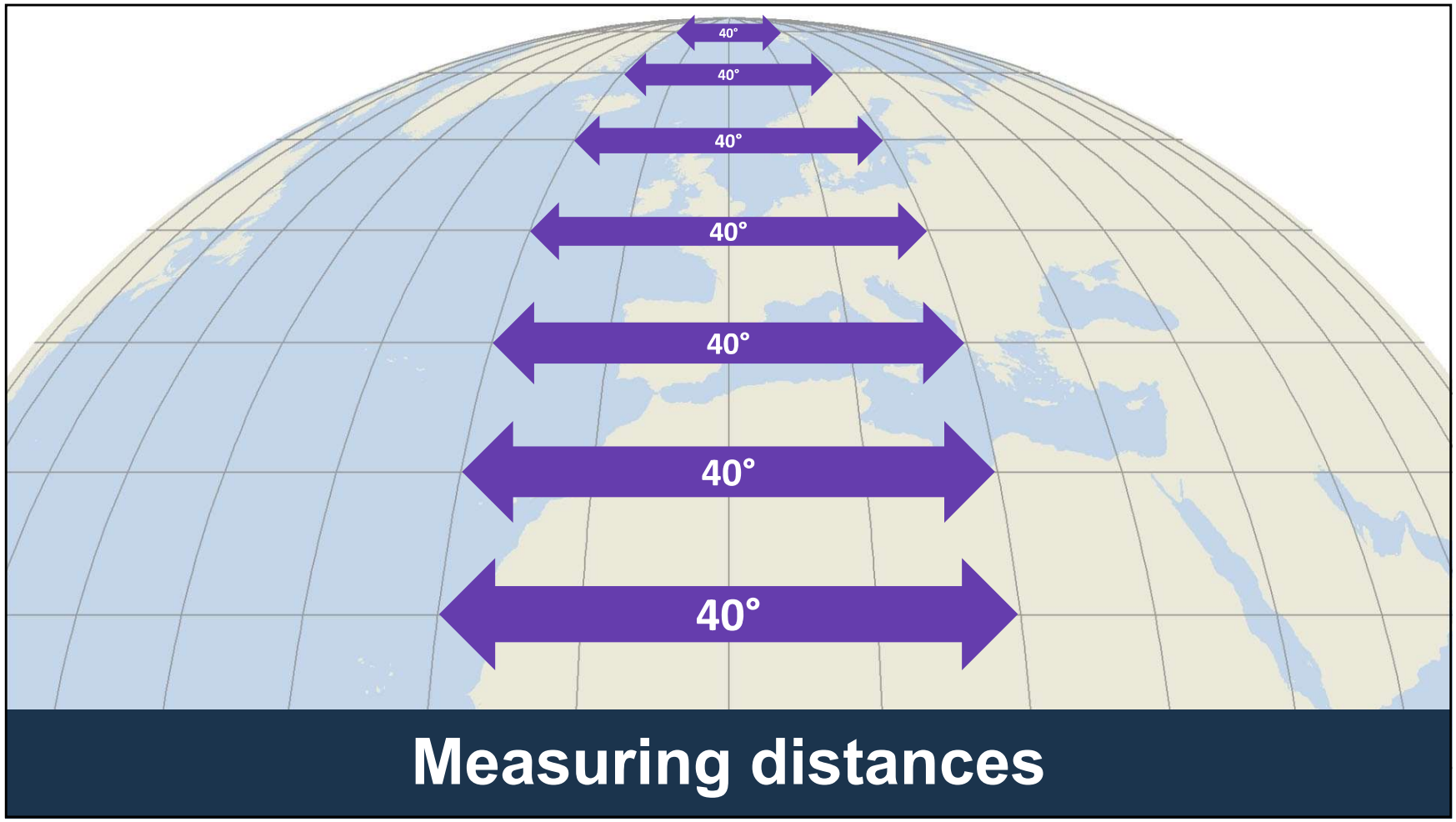
Latitude (parallels)



Longitude (meridians)

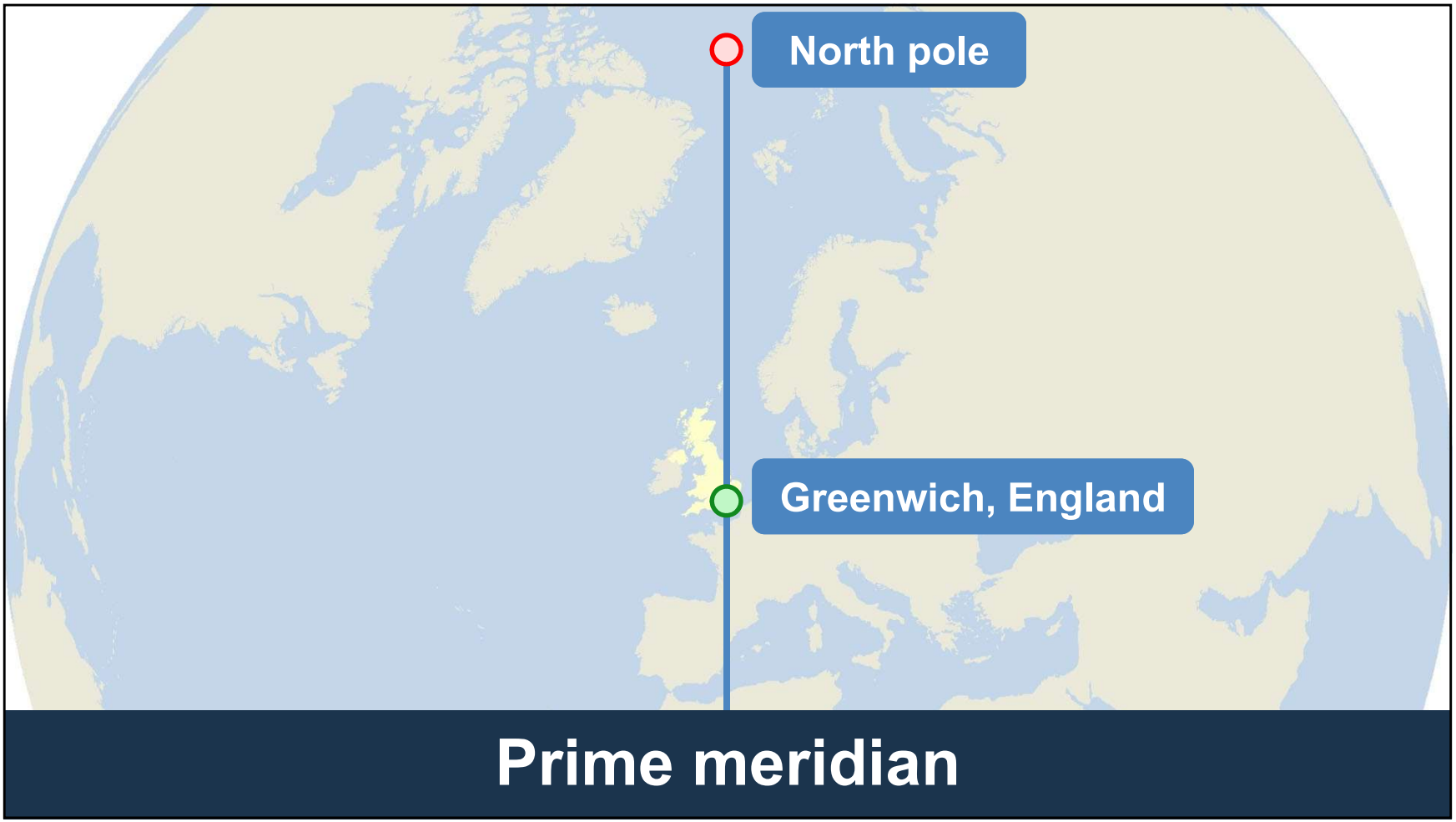


Graticule



Measuring distances

Defining the prime meridian



Why Greenwich?

- Chosen in 1884
- Was already basis for U.S. time zones, most sea charts

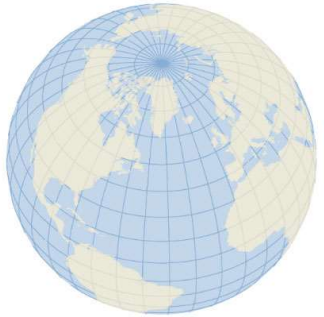
Photomechanical print after Lock & Whitfield

Airy Transit Circle

Where in the Observatory?

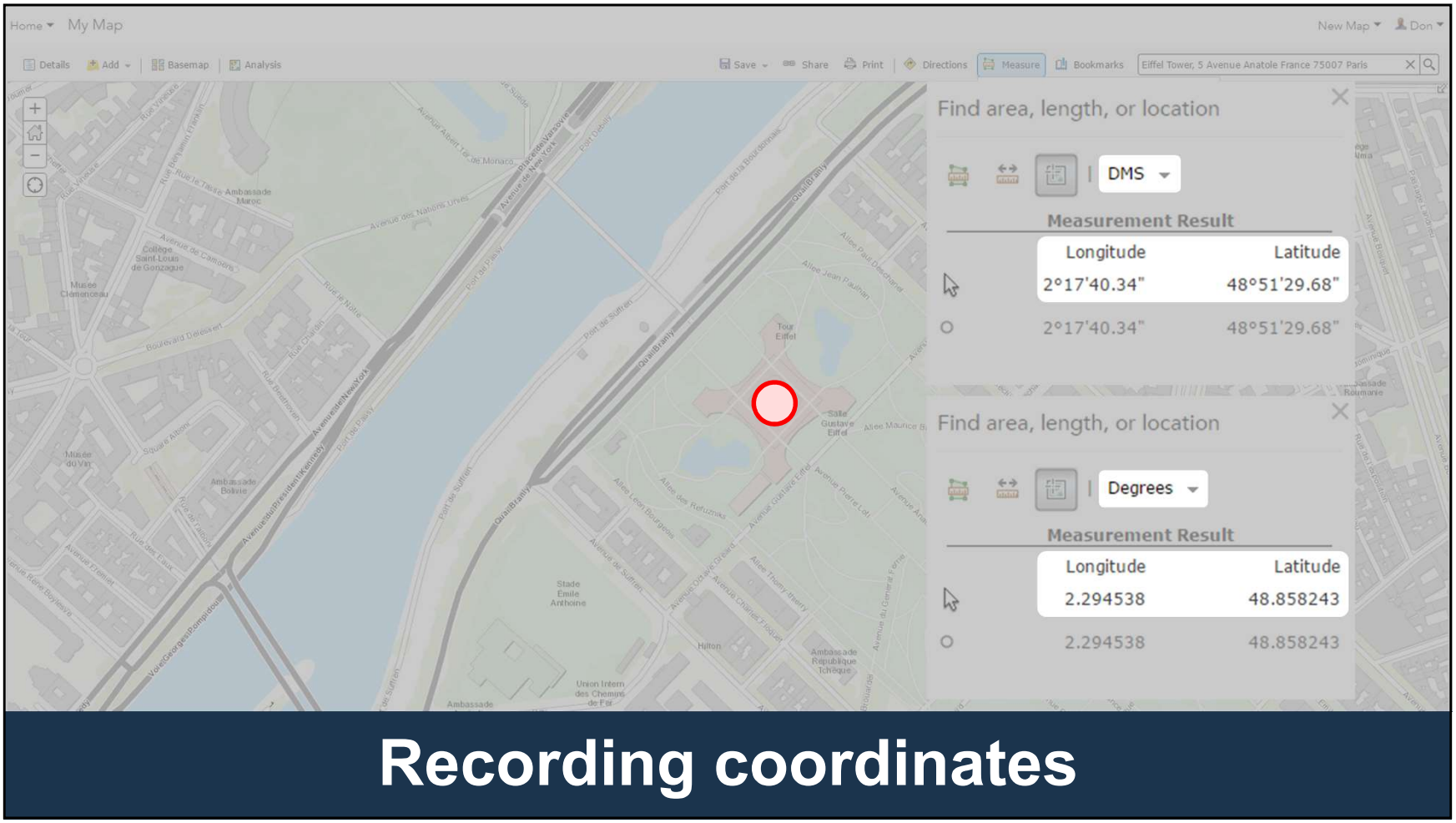
Long/Lat Coordinates

- Sexagesimal (base 60) system
- Degrees, Minutes, Seconds (DMS)
  - e.g. 142° 32’ 23”

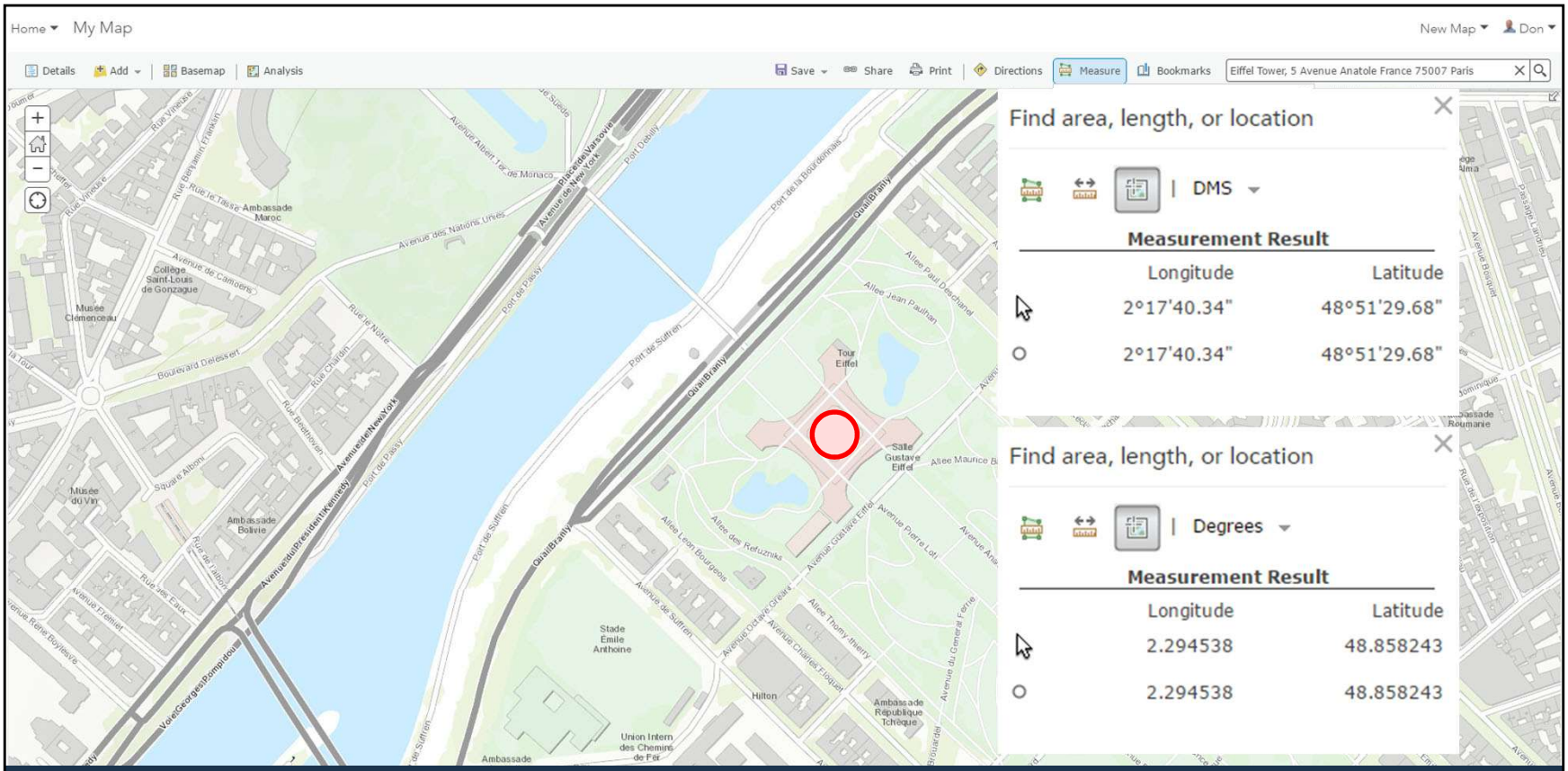


1 degree = 60 minutes

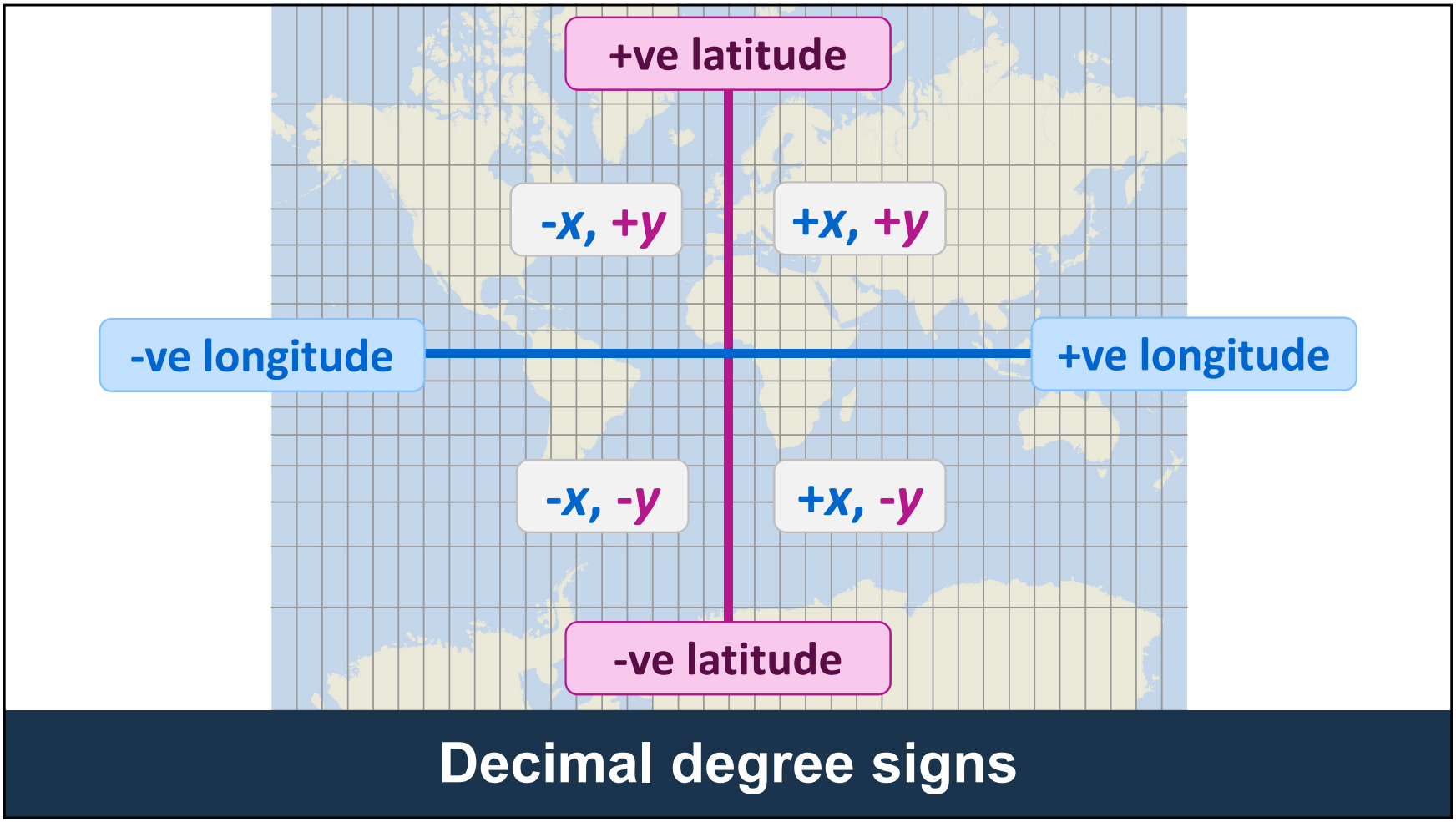
1 minute = 60 seconds.



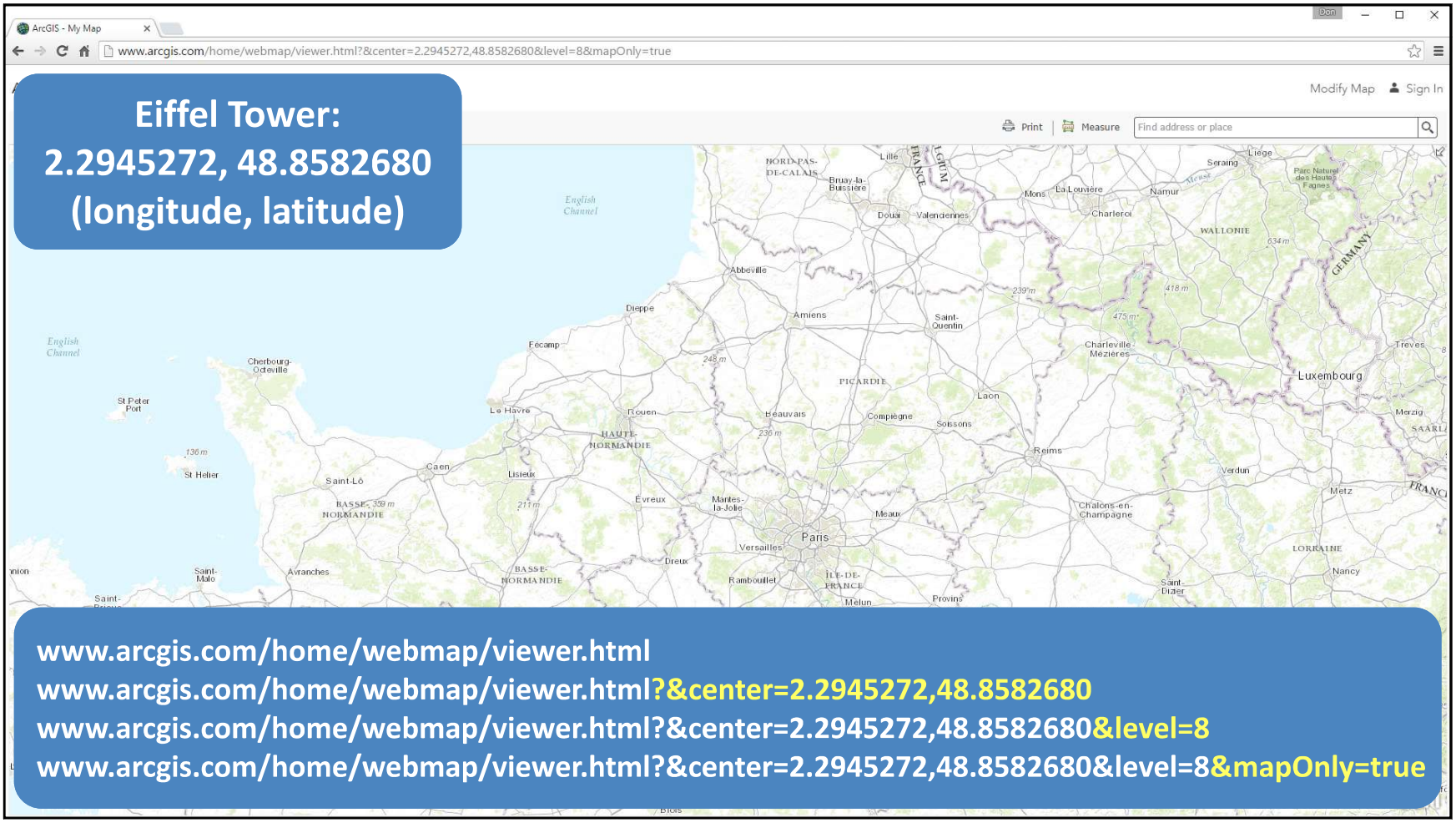
Recording coordinates



Recording coordinates



Decimal degree signs



121° 8’ 6”

Converting DMS/DD coordinates

= 121 + (8/60) + (6/3600)

= 121.135

$$121° 8' 6''$$

$$= D + (M/60) + (S/3600)$$

$$= 121 + (8/60) + (6/3600)$$

$$= 121.135$$

Degrees, Minutes, Seconds → Decimal Degrees

121°135

.135 x 60 = 8.1

.1 x 60 = 6

121° 8’ 6”

Decimal degrees → Degrees, minutes, seconds